

CLAIMS

I claim:

1. A roller assembly for a lawnmower, comprising:

(A) a tow arm having first and second links, the first link having a rear end that is pivotally attached to a front end of the second link and having a front end configured to be supported at least indirectly on a frame of a lawnmower;

5 (B) a shaft supported and at least indirectly coupled on the rear link;

(C) at least one roller disposed on the shaft; and

(D) a spring disposed between the first and second links and configured to bias the second link downwardly relative to the first link thereby to bias the roller against a ground surface.

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2. The roller assembly as recited in claim 1, wherein the spring comprises a torsion spring having first and second ends acting on the first and second links, respectively.

3. The roller assembly as recited in claim 1, further comprising a quick connect assembly having

a rod mountable on one of a) the first link of the tow arm and b) the lawnmower frame, and

5 a sleeve mounted on the other of the first link of the tow arm and the lawnmower frame, the sleeve configured to be inserted over the rod to thereby attach the tow arm to the lawnmower frame.

4. The roller assembly as recited in claim 3, wherein the quick connect assembly further comprises a hitch pin configured to attach the sleeve to the rod.
5. The roller assembly as recited in claim 4, wherein the hitch pin passes radially through the sleeve and into the rod.
6. The roller assembly as recited in claim 4, further comprising a latch assembly that is selectively engageable to hold the roller assembly in a raised, inoperative position.
7. The roller assembly as recited in claim 6, wherein the latch assembly includes
a collar mounted on the first link,
a latch pin mounted on the first link in alignment with the collar, and
a cross pin extending radially from the latch pin and configured to
5 selectively rest against an axial surface of the collar to hold the latch pin in an
extended position to thereby hold the roller assembly in the inoperative position.
8. The roller assembly as recited in claim 7, further comprising a handle mounted to the second link, the handle being actuatable to raise the roller assembly to the inoperative position.
9. The roller assembly as recited in claim 1, further comprising a stop fastened to the first link, the stop being configured to limit a range of downward motion of the roller assembly.

10. A roller assembly for attachment to a lawnmower, comprising:

(A) a shaft disposed in a lateral direction with respect to a ground surface;

(B) at least one roller disposed on the shaft, the at least one roller configured to contact and ride along the ground surface; and

5 (C) a tow arm to which said shaft is connected; and

(D) a quick connect assembly having

a sleeve mountable to one of a) a front end portion of the tow arm and b) the lawnmower frame, and

10 a rod mountable on the other of the front end portion of the tow arm and the lawnmower frame and configured for attachment to the sleeve to thereby connect the tow arm to the lawnmower frame.

11. The roller assembly as recited in claim 10, further comprising a hitch pin configured to attach the sleeve to the rod.

12. The roller assembly as recited in claim 11, wherein the quick connect assembly further includes a mounting bracket and a plurality of U-bolts mounted to the lawnmower frame, and wherein one of the rod and the sleeve is mounted on the mounting bracket.

13. The roller assembly as recited in claim 11, wherein the tow arm includes a front and a rear link, the front link having a front end and a rear end pivotally attached to a

front end of the rear link, and wherein one of the rod and the sleeve is mounted on the front end of the front link.

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14. The roller assembly as recited in claim 13, further comprising a latch assembly configured to be selectively engageable to latch the rear link to the front link so as to hold the roller assembly in a raised, inoperative position.

15. The roller assembly as recited in claim 14, wherein the latch assembly includes
a latch pin mounted on the front link, a collar mounted on the front link in
alignment with the latch pin, the collar having a slot formed in an axial end thereof, and
a cross pin extending radially from the latch pin, wherein the latch pin is rotatable
5 between 1) a first position in which the cross pin is aligned with and seatable in the slot to
permit movement of the latch pin to a retracted position to disengage the latch assembly
and 2) a second position in which the cross pin is misaligned from the slot to prevent
movement of the latch pin to the retraced position, thereby maintaining the latch pin in an
extended position and engaging the latch assembly.

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16. A roller assembly for attachment to a lawnmower, comprising:

(A) a tow arm having a front link with a rear end pivotally attached to a front
end of a rear link, and a front end configured to be at least indirectly supported by a
lawnmower;

5 (B) a shaft supported at least indirectly by a rear end of the rear link of the tow
arm; and

(C) a plurality of rollers disposed on the shaft and configured to roll along a ground surface; and

(D) a latch assembly configured to be selectively engageable to latch the rear
10 link to the front link in a manner that holds the roller assembly in a raised, inoperative position, wherein the latch assembly includes a latch pin which is selective movable between a retracted position in which the latch assembly is disengaged to an extended position in which the latch assembly is engaged.

17. The roller assembly of claim 16, wherein the latch pin is biased by a spring to the retracted position thereof.

18. The roller assembly as recited in claim 17, further comprising a collar that is mounted on the the front link in alignment with the latch pin and through which the latch pin extends, and further comprising a cross pin that extends radially from the latch pin and that is configured to selectively rest against an axial surface of the collar to hold the
5 latch pin in the extended position thereof.

19. The roller assembly as recited in claim 18, wherein a slot is formed in an axial end of the collar and the cross pin is seated in the slot when the latch pin is in the retracted position thereof and extended out of the slot when the latch pin is in the extended position thereof.

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20. A lawnmower, comprising:

- (A) a cutting deck;
- (B) a motorized drive assembly;
- (C) a plurality of wheels;

5 (C) a frame that supports the motorized drive assembly and the cutting deck and that is supported on the plurality of wheels; and

- (D) a roller assembly that includes

a tow arm having front and rear links, the front link having a rear end pivotally hinged to a front end of the rear link and having a front end
10 configured for attachment to the frame;

a shaft coupled to a rear end of the rear link;

at least one roller disposed on the shaft; and

a spring disposed between the rear end of the front link and the front end of the rear link, the spring configured to bias the roller assembly
15 downwardly toward the ground surface.

21. The lawnmower as recited in claim 20, further comprising a quick connect assembly configured for connecting and releasing the roller assembly from the lawnmower frame.

22. The lawnmower as recited in claim 21, wherein the quick connect assembly includes:

a rod mounted on one of a) the front link of the tow arm and b) the lawnmower frame, and

5 a sleeve mounted on the other of the front link of the tow arm and the lawnmower frame, the sleeve configured to be selectively inserted over the rod to thereby attach the tow arm to the lawnmower frame.

23. A lawnmower, comprising:

(A) a motorized drive assembly;

(B) a cutter assembly that is driven by the motorized drive assembly;

(C) a plurality of wheels;

5 (C) a frame that supports the motorized drive assembly and the cutter assembly on the plurality of wheels; and

(D) a roller assembly that includes

a tow arm,

a quick connect assembly configured to selectively attach the tow

10 arm of the roller assembly to the frame of the lawnmower,

a shaft coupled to the tow arm, and

a roller mounted on the shaft and configured to roll along the

ground surface.

24. The lawnmower as recited in claim 23, wherein the frame includes at least one cross bar, and the quick connect assembly attaches the tow arm to the at least one cross bar.

25. The lawnmower as recited in claim 23, wherein the quick connect assembly includes:

a rod mounted on one of a) the front link of the tow arm and b) the lawnmower frame, and

5 a sleeve mounted on the other of the front link of the tow arm and the lawnmower frame, the sleeve configured to be selectively inserted over the rod to thereby attach the tow arm to the lawnmower frame.

26. The lawnmower as recited in claim 25, wherein the quick connect assembly further includes a mounting bracket and a plurality of U-shaped fasteners, wherein the mounting bracket is coupled to the frame by the plurality of U-shaped fasteners, and wherein one of the rod and the sleeve is coupled to the mounting bracket.

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27. The lawnmower as recited in claim 25, wherein one of the sleeve and the rod is mounted on the tow arm, and wherein the other of the rod and the sleeve is mounted on the mounting bracket.

28. The lawnmower as recited in claim 25, further comprising a hitch pin configured to selectively attach the sleeve to the rod.

29. A lawnmower, comprising:
- (A) a motorized drive assembly;
 - (B) a cutter assembly that is driven by the motorized drive assembly;
 - (C) a plurality of wheels;
 - 5 (D) a frame that supports of the motorized drive assembly and the cutter assembly, the frame having at least one cross bar and
 - (E) a roller assembly having
 - a tow arm having a front and rear links, the front link having a
 - front end and having a rear end pivotally attached to a rear end of the rear
 - 10 link,
 - a shaft attached to a rear end of the rear link of the tow arm, and
 - a plurality of rollers disposed on the shaft;
 - a spring which is disposed between the front and rear links and
 - which is configured to bias the roller assembly toward a lowered position
 - 15 in which the rollers can roll along a ground surface; and
 - a latch assembly that is located between the front and rear links of
 - the tow arm and that is selectively engageable to latch the roller assembly
 - in the raised, inoperative position in which the rollers are incapable of
 - rolling along a ground surface.
30. The lawnmower as recited in claim 29, wherein the latch assembly includes a
- latch pin that assumes a retracted position when the latch assembly is disengaged and an
- extended position when the latch assembly is engaged, and further comprising a cross pin

5 which is mounted on the latch pin and which is capable, depending on a rotational
position of the latch pin, of either preventing movement of the latch pin into the retracted
position thereof from the extended position thereof or permitting said movement.

31. A lawnmower, comprising:

- (A) a motorized drive assembly;
- (B) a cutter assembly driven by the motorized drive assembly;
- (C) a frame that supports the motorized drive assembly and the cutter

5 assembly and that is supported on wheels; and

- (D) a roller assembly that includes:

a tow arm having a front link with a first end pivotally hinged to a
first end of a rear link, the front link having a second end and the rear link
having a second end,

10 a quick connect assembly having

a rod mounted on one of a) the front link of the tow arm and b) the
lawnmower frame, and

a sleeve mounted on the other of the front link of the tow arm and
the lawnmower frame, the sleeve configured to be selectively inserted

15 over the rod to thereby attach the tow arm to the lawnmower frame, and

a hitch pin configured to selectively hold the sleeve on the rod,

a shaft coupled to the second end of the rear link of the at least one
tow arm,

at least one roller mounted to the shaft,

20 a spring coupled between the front link and the rear link of the tow arm, the spring configured to bias the roller assembly downwardly toward a ground surface, and

 a handle attached to the rear link of the tow arm, the handle configured to be actuatable to lift the roller assembly to a raised,
25 inoperative position with respect to the ground surface, and

 a latch assembly configured to be selectively engageable to hold the roller assembly in raised, the inoperative position thereof.